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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,051	04/13/2004	Kramadhathi V. Ravi	42P8813XD	6109

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EXAMINER

NGUYEN, JOSEPH H

ART UNIT PAPER NUMBER

2815

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/824,051	RAVI, KRAMADHATI V.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Joseph Nguyen	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bendik et al. (US 5,591,678) in view of Okojie (US 6,248,646).

Regarding claim 1, Bendik et al. discloses in figure 1 an apparatus comprising a circuit substrate comprising a single crystal semiconductor layer 46 having smallest dimension reduced (col. 4, lines 10-15); with circuit devices 50 formed in the single crystal layer. The phrase "a single crystal semiconductor layer having a smallest dimension reduced" is a broad limitation and herein interpreted as the single crystal semiconductor layer being thinned to a certain thickness as disclosed in col. 4, lines 10-15 of Bendik et al. Bendik et al. does not disclose the plurality of circuit substrates in a non-planar orientation relative to one another. However, Okojie discloses in figure 2 the plurality of circuit substrates 24 in a non-planar orientation relative to one another (col. 2, lines 63-65). Note that wafers 24 are hereby considered "substrates" on which semiconductor elements will be formed. In view of such teaching, it would have been obvious at the time of the present invention to modify Bendik et al. by having the plurality of circuit substrates in a non-planar orientation relative to one another to

facilitate production of optimally thin wafers (substrates) which will have minimal parasitics when used in devices (col. 1, lines 62-64, Okojie).

Regarding claim 4, Bendik et al. discloses in figure 3 the circuit devices form integrated circuits 70b, 74 that interact with other electrical devices off the single crystal layer on which the integrated circuits are formed (col. 7, lines 29-31).

Regarding claim 5, Okojie discloses the smallest dimension of each circuit substrate 24 comprises a thickness less than 100 microns (col. 3, lines 33-36).

Regarding claim 6, Bendik et al. discloses a dielectric material 44 (col. 4, line 5).  
Disposed between the adjacent ones of the plurality of circuit substrates 58, 46.

### ***Response to Arguments***

Applicant's arguments filed on 11/07/2005 have been fully considered but they are not persuasive.


With respect to claim 1, applicant argues Okojie shows in figure 2 small wafers are in a non-planar orientation relative to larger wafer 20, not relative to one another as recited in claim 1. However, each wafer 24 is considered as being formed in its own plane, as such different wafers should be formed in different planes as described in figures 1-2 (showing the same embodiment). Therefore, wafers 24 are formed in a non-planar orientation relative to one another. Further, with strong motivation provided by Okojie, the combination of Bendik et al. and Okojie reads on the claimed invention herein.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN  
January 12, 2006.



**KENNETH PARKER**  
SUPERVISORY PATENT EXAMINER